DOCUMENT RESUME

ED 130 360 CS 501 531

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TITLE The Effect of Vertical Camera Angle on the Perceived Credibility of a Televised Speaker.
PUB DATE 76
NOTE 14p.; Paper presented at the Annual Meeting of the Western Speech Communication Association (San Francisco, November 1976)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS College Students; *Communication (Thought Transfer); *Credibility; Higher Education; Information Theory; *Persuasive Discourse; Public Opinion; Television Research
IDENTIFIERS *Camera Angles

ABSTRACT

In order to test the effects of high camera angle on credibility, high- and low-camera-angle versions of a televised speaker were recorded on videotape. Semantic differential ratings of the speaker were obtained from 176 college students randomly assigned to high- or low-camera-angle treatment groups. Factors identified as dynamism, competence, and sociability emerged from analyses of the semantic differential ratings, but high- and low-camera-angle groups differed only in their ratings of the speaker's sociability. These results are interpreted as supporting the argument that theoretical concepts of power and dominance are not highly similar to the construct of source credibility. (AA)

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THE EFFECT OF VERTICAL CAMERA ANGLE ON THE PERCEIVED CREDIBILITY OF A TELEVISED SPEAKER

by
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A Paper Presented at the Annual Convention of the Western Speech Communication Association, San Francisco, November 22, 1976

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Recognition of source credibility as an important variable in mass communication research is well established. An ever-growing body of literature clearly indicates that the perceived credibility of the communicator must be controlled or measured if the researcher is going to prevent contamination due to the credibility variable. Scholars have attempted to determine whether the physical characteristics of the speaker, message structure, and occasion create differences in perceived credibility, and hence result in differences in viewer comprehension, beliefs, attitudes and behaviors.

In recent years, mass communication researchers have begun to investigate television and film production techniques as meaningful independent variables which might contribute to the perceived credibility of a televised speaker. Judging from the articles published in communication journals and the papers presented at national and regional conventions, the single visual production variable which has received the greatest attention by researchers is that of vertical camera angle.

Drawing from selected writings of film and television production theorists, scholars have set forth a number of hypotheses relating to camera angle and its impact upon viewers' perceptions of communicator image. These hypotheses have been derived primarily from such theoretical principles as "higher camera angles imply weakness" and "low angle camera shots contribute strength and dominance to the visual image."[1] Basic television production textbooks have incorporated these "principles" as though they were well-grounded in empirical evidence.[2]

The pioneering study which focused on the effects of camera angle on

communicator credibility was conducted by Tiemens.[3] Utilizing three camera angles (high, medium, low) as his experimental treatments, Tiemens asked subjects to rate each speaker as being most or least communicative; most or least knowledgeable; most or least authoritative; and most or least convincing. The results provided limited support for the principle that camera angle influences the perceived credibility of the communicator. Subjects' ratings for one of three newscasters indicated that the low camera angle yielded a significantly higher evaluation of the newscaster than did the high camera angle, on the dimensions of communicative ability, knowledge and authoritativeness.

Building upon the initial findings of Tiemens, Mandell and Shaw[4] conducted a study to discover the extent to which television images could unconsciously influence judgments about a news figure presented in a short newscast when televised from high, medium and low camera angles. Using semantic differential scales as the basis for eliciting subjects' judgments, the authors designed their instrument to include the dimensions of "potency," "evaluation" and "activity," with the final dimension relating most directly to a second experimental variable, "bodily activity." The results showed that on the dimensions of "potency" and "activity," the lower the camera angle, the higher the rating of the news figure, "despite the fact [that] he was seen for only ten seconds within the news program."

Most recently, an ambitious two-part study by McCain, Chilberg and Wakshlag[5] reports findings which apparently contradict the results of the two earlier investigations. Employing the same theoretical "principles" as a point of departure, the authors reject Tiemens' assumption that the power and dominance concepts contained in the writings of film theorists are similar enough to the

multi-dimensional source credibility construct to warrant highly correlative results. Thus, the authors argue that "high power and dominance of a televised source would not lead to high credibility, but would rather result in negative credibility ratings."

Using 24 semantic differential scales as the initial dependent measure, the experimental design provided for five visual treatments (high exaggerated, high subtle, horizontal, low subtle, low exaggerated) and four speakers (two males, two females), resulting in 20 conditions. A factor analysis of the semantic differential scales yielded a four factor solution (competence, composure, sociability and dynamism), and these data were subjected to a two-way analysis of variance. The results revealed significant differences between angle treatments for all factors except dynamism. Noting a near perfect linear relationship between camera angle and perceived composure, sociability, and competence, the authors concluded, "As the camera angle was raised, so too was a speaker's perceived credibility on three of four dimensions."

Viewing the conflicting results of these three studies as sufficient rationale for additional research, the authors of the present investigation also attempted to integrate the dependent measures which were suggested by McCain et.al. as a possible explanation for the reported disparity. The specific purpose of this study was to determine whether there was a significant relationship between camera angle and perceived credibility of a televised speaker. Since evidence from previous research was conflicting, the following non-directional null hypothesis was proposed:

H_o There is no significant difference between the perceived credibility

of a televised speaker when viewed from a high as opposed to a low camera angle.

Procedure

In order to test the hypothesis cited above, two versions of a televised speaker (male) were recorded on videotape. The speaker was identified as a graduate teaching assistant currently doing research in the area of mass communication effects. The content of the stimulus dealt specifically with the importance of recognizing the complexities of media research and the interface between mediated messages and interpersonal relationships. The length of both versions was exactly 2 minutes 42 seconds. A matched medium close-up (bust shot) and plain dark background were employed to control for possible confounding visual elements. Following the recommendations of Mandell and Shaw,[6] the high camera angle (Treatment A) was set at 12 degrees above the horizontal plane, and the low camera angle (Treatment B) at 12 degrees below the horizontal plane. An IVC color camera with a variable focal length zoom lens was positioned six feet from the speaker and video recording was accomplished with an Ampex 7500 color videotape unit. A five-member panel consisting of the authors and three television production specialists from the University of Utah's Instructional Television division judged the two versions to be comparable in terms of production quality, verbal fluency, delivery and eye contact.

A total of 176 students enrolled in a basic introduction to mass communication course at the University were randomly assigned to the two experimental treatments. The subjects in Treatment Group A (N=88) viewed the high camera angle version, those in Treatment Group B (N=88) viewed the low camera angle

version. Since videotaped instructional materials are integrated into approximately 80% of the introductory class periods, all subjects were well-accustomed to viewing the television monitors as a part of their regular instructional sequence. The experimental setting was planned to coincide with a class period devoted to media research.

Immediately following the viewing of the videotaped speech, subjects were asked to evaluate the speaker on thirty (30) semantic differential scales. Twenty-seven of the scales selected for this study were drawn from a pool of pre-tested items developed for the measurement of mass media sources by McCroskey, Jensen and Valencia.[7] Three additional scales judged to comprise a "potency" dimension were added in an attempt to further clarify the findings of Mandell and Shaw. Each bi-polar scale contained seven steps, thus affording a potential minimum rating of one (1) and a maximum rating of seven (7).[8]

Analysis and Results

The preliminary data were submitted to principle components factor analysis with orthogonal rotation (Computer Program SPSS, VARIMAX option).[9] In order for a variable to be considered loaded on a factor, a loading of .60 or higher was required with a loading of no more than .40 on any other factor. For the acceptance of a factor, two or more scales had to meet the 60/40 criterion.

Using these criteria, three factors emerged from the analyses and were labeled "Dynamism," "Competence," and "Sociability." These three factors accounted for 88.6% of the total variance. (Table I reports the scale loadings and accumulated variance.) The "Dynamism" factor consisted of four scales (Timid-Bold, Active-Passive, Agressive-Meek, Outgoing-Withdrawn) and

TABLE I
FACTOR LOADINGS ON SCALES USED TO
MEASURE TELEVISED SPEAKER'S CREDIBILITY

Variable	I Dynamism	II Competence	III Sociability
Timid-Bold	.74	.15	-.10
Active-Passive	.66	.04	.10
Agressive-Meek	.78	.17	-.08
Outgoing-Withdrawn	.71	.07	.18
Intelligent-Unintelligent	.11	.77	.01
Informed-Uninformed	.08	.80	.04
Qualified-Unqualified	.15	.74	.07
Expert-Inexpert	.22	.71	.09
Reliable-Unreliable	.04	.60	.21
Competent-Incompetent	.15	.73	.24
Awful-Nice	.08	.26	.74
Friendly-Unfriendly	.00	.05	.77
Cheerful-Gloomy	.28	.10	.66
Good-Bad	.28	.33	.63
Pleasant-Unpleasant	.09	.24	.75
Accumulated Variance (%)	51.7	73.0	88.6
Eigenvalues	7.77	3.19	2.34

accounted for over half the variance (51.7%). The "Competence" factor was comprised of six scales (Intelligent-Unintelligent, Informed-Uninformed, Qualified-Unqualified, Expert-Inexpert, Reliable-Unreliable, Competent-Incompetent) and contributed 21.3% of the variance. "Sociability" consisted of five scales (Awful-Nice, Friendly-Unfriendly, Cheerful-Gloomy, Good-Bad, Pleasant-Unpleasant) and added 15.6%. These three factors became the dependent measures for the study.

Utilizing the data resulting from the factor analysis, an independent t test was performed on the group means for each of the three factors (Computer Program SPSS, T-TEST). Using a two-tailed test, the resulting t values were as follows: Factor I = 1.43, Factor II = 0.29, FACTOR III = 2.20. Only the t value for the third factor (Sociability) was found significant at the .05 level of confidence. (Table II summarizes the t test results for all three factors.) In this instance, the high camera angle subjects (Group A) perceived the speaker's credibility as being significantly higher than the low camera angle subjects (Group B).

Discussion

Consistent with previous credibility research, the speaker's image was found to be multi-dimensional. Selecting thirty scales that had constituted factors in earlier studies, factor analysis of the bi-polar adjectives yielded a total of fifteen scales which met the selection criteria. These scales represented three factors which had been previously identified and were consistent with the a priori selection of items for this study. Given the variation in the items selected across studies and expected differences in factor structures, the three factors derived from the present study appear highly similar to the dynamism, competence and

TABLE II
t TESTS OF GROUP MEANS
FOR ALL THREE FACTORS

Factor	Mean	Standard Deviation	Standard Error	t Value	p <
I. Dynamism					
Group A	3.45	1.16	.12	-1.43	.154
Group B	3.70	1.21	.13		
II. Competence					
Group A	4.81	1.15	.12	.29	.773
Group B	4.76	1.20	.13		
III. Sociability					
Group A	3.51	1.09	.12	2.20	.029
Group B	3.16	1.02	.11		

Degrees of Freedom = 174
Critical Value (p .05) = 2.00

sociability factors reported by McCain et. al.[10] Surprisingly, the scales which were expected to comprise a "composure" dimension failed to meet the selection criteria. Also of interest was the absence of a "potency" dimension from the resulting factors. Hence, this study was unable to test the suggestion of McCain et. al. that the potency dimension of meaning employed in the Mandell and Shaw study is most analagous to the power and dominance judgments afforded by theorists.

Turning to the t tests of group means for the factors of dynamism, competence and sociability, one can conclude that the present study provides support for the position that a high camera angle appears to raise a televised speaker's credibility on the sociability dimension. While variation in camera angle apparently had little impact on viewers' perceptions concerning the speaker's competence or dynamic nature, the high camera angle resulted in the perception of more positive social qualities. As proposed by McCain et. al., camera angles which present televised speakers as being unduly powerful or dominant might reduce the extent to which audiences can easily relate to the speaker. Higher camera angles help neutralize the increased status conferred by the television medium, and hence contribute to the perception that the televised speaker holds a status more similar to that of the viewer.

That the present study revealed no significant differences on the dynamism dimension is consistent with the findings reported by McCain et. al. Yet, the advantage which they found for the high camera angle on the competence factor was not supported by the results of this investigation. Any one or more of a number of possible explanations could be enlisted to clarify the disparity in

findings. For instance, contamination might be due to variations in delivery that went undetected, though repeated playback of the two versions only serve to increase the authors' confidence that the two stimulus presentations are comparable. Differences in the specific scales used in the two studies could also provide a plausible explanation. However, the authors are more inclined to suggest that the judgments which an audience makes concerning a televised speaker's image are based upon a number of complex cognitive variables which are in a constant state of flux within each viewer over time, and certainly across different subjects. Additional variations in messages, speakers and other experimental conditions may all have contributed in part to the differences reported.

The present study would seem to provide additional support for the position that theorists' judgments concerning power and dominance are not highly similar to the construct of source credibility. Yet these findings leave a number of important questions unanswered, and suggest the obvious need for further research in a wide variety of experimental settings with far greater diversity in subject populations. Our understanding of the relationship between camera angle and viewers' perceptions of a speaker's multidimensional televised image remains extremely limited.

FOOTNOTES

1. Theoretical positions such as these can be found in the writings of Rudolf Arnheim, Film as Art, (Berkeley, California: University of California Press, 1967), pp. 38-39; and Sergei Eisenstein, Film Form and the Film Sense, (Cleveland, Ohio: World Publishing Company, 1965), p. 54.

2. For example, see Rudy Bretz, Techniques of Television Production, Second Edition, (New York: McGraw-Hill Book Company, Inc., 1962), p. 32; Gerald Millerson, The Techniques of Television Production, Revised Edition, (New York: Hastings House, Publishers, Inc., 1968), pp. 264-266.

3. Robert K. Tiemens, "Some Relationships of Camera Angle to Communicator Credibility," Journal of Broadcasting XIV: 4 (Fall 1970), pp. 483-490.

4. Lee M. Mandell and Donald L. Shaw, "Judging People in the News - Unconsciously: Effect of Camera Angle and Bodily Activity," Journal of Broadcasting, XVII: 3 (Summer 1973), pp. 353-362.

5. Thomas A. McCain, Joseph C. Chilberg and Jacob J. Wakshlag, "'Down So Long It Looks Like Up': The Effect of Camera Angle on Source Credibility and Attraction," Unpublished manuscript (undated).

6. Mandell and Shaw, p. 356.

7. James C. McCroskey, Thomas Jensen and Cynthia Valencia, "Measurement of the Credibility of Mass Media Sources." Paper presented at Western Speech Communication Association Convention, Albuquerque, New Mexico (November 1973).

8. The entire list of thirty scales are as follows: strong-weak, impressive-unimpressive, intelligent-unintelligent, good natured-irritable, relaxed-tense, believable-unbelievable, bold-timid, trained-untrained, nice-awful, active-passive, informed-uninformed, calm-excited, qualified-unqualified, logical-illogical, soft-hard, agressive-meek, friendly-unfriendly, inexpert-expert, kind-cruel, cheerful-gloomy, potent-impotent, outgoing-withdrawn, good-bad, poised-nervous, fast-slow, reliable-unreliable, pleasant-unpleasant, competent-incompetent, adventurous-cautious, confident-lacks confidence.

9. The appropriateness of the factor analytic techniques employed are suggested by Richard L. Gorsuch, Factor Analysis, (Philadelphia: W. B. Saunders Company, 1974).

Footnotes - continued

10. The authors are cautioned by critics of factor analytic studies to be careful in making generalizations from one study to another. See for example, Gary Cronkhite and Jo Liska, "A Critique of Factor-Analytic Approaches to the Study of Credibility." Paper presented at Western Speech Communication Association Convention, Seattle, Washington (November 1975).